SUBMITTED ELECTRONICALLY VIA ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

Re: WT Docket No. 17-200

Western Farmers Electric Cooperative (WFEC) is writing in response to the Wireless Telecommunications Bureau's request for comment related to FCC WT Docket No. 17-200. WFEC is a generation and transmission cooperative that provides essential electric service to 21-member cooperatives, Altus Air Force Base, farming interests, oil and gas producers, and other commercial and industrial applications throughout Oklahoma and parts of New Mexico, Kansas, and Texas. WFEC was organized in 1941 when western Oklahoma rural electric distribution cooperatives found it necessary to secure an adequate power supply at rates farmers and rural industrial developers could afford.

WFEC has established the need for broadband network connectivity in support of its power operations and supports the proposed reconfiguration of the band in question to provide broadband operations to critical infrastructure operators, especially utilities. WFEC also supports the proposed 3/3 MHz broadband and 2/2 MHz narrowband configuration to maintain the possibility of narrowband operations in the band. The information contained herein addresses the operational need for broadband, economic impact, and regulatory challenges is provided in support of WFEC's position.

WFEC Key Facts

Gas and Coal Generation: 3,364 Megawatts

Purchase Power Contracts (Gas, Hydro, Wind): 2,975 Megawatts

Renewable Generation (Solar): 46 Megawatts

Transmission Line: 3,700 miles

Member Owner Distribution Line: 94,160 miles

Service Territory: 78 Counties in Oklahoma, New Mexico, Texas, and Kansas ~ 100,000 Sq. Miles

Member Owner meters: 356,500

Long-term Needs Assessed

In 2012 WFEC performed an 18-month engineering study to assess the long-term needs of WFEC telecommunications systems through the year 2023. WFEC projected telecommunications requirements based on low, medium, and high growth scenarios. These scenarios accounted for population increase/decrease, smart grid applications, CCTV video surveillance, electric vehicle charging stations, and additional automation capabilities centered on increased collection of telemetry

information. WFEC concluded that a medium growth scenario would require an average of 5 Megabits per second (Mbps) to each endpoint in the network by the year 2023. This requirement is clearly outside of the capabilities of traditional narrowband and wideband radio access networks. The nature of our requirement as derived from the long-term needs assessment inherently requires broadband networks to deliver the required capacity.

Evolving Regulations and Future State Requirements

Since the needs assessment was performed in 2012, WFEC's future state requirements and projections have evolved due to National Energy Reliability Corporation (NERC) reliability standards concerning cyber security related to Low Impact Assets of the Bulk Electric System. Utilities are now required to control electronic access to Low Impact Assets which requires a management plane to the Low Impact Assets of the Bulk Electric System for management of the Low Impact Asset Electronic Access Point (LEAP), as defined by NERC. Not only are the regulations evolving around cyber security, they are also forcing utilities to consider more robust physical security initiatives at key power infrastructure including Low Impact Assets. Many physical access control systems require robust communications to the sites to ensure the validity of access requests as well as changes to access permissions for each site. These physical access control systems are typically controlled from a centralized location and therefore require a communications network for the traffic required by the hardware and software. The reliability of the power systems operated by WFEC and other utilities across the nation has become the paramount concern for all sixteen critical infrastructure sectors. Without access to broadband networks we will not be able to support future state requirements associated with security and reliability of the power infrastructure in our nation. The systems used by utilities to address existing and future regulatory requirements in their efforts to increase availability and reliability will require telecommunications and networks that support data planes as well as management planes. The networks of the future will be unified and will carry data related to control, telemetry, metering, voice, video, network and security management, and cyber security monitoring. WFEC currently faces challenges when trying to accomplish some or all of these objectives while employing low speed networks designed for power telemetry information. Reliability is the driving force behind the need for broadband networks dedicated to critical infrastructure operators, especially utilities.

Rural Challenges

Utilities, such as WFEC, that serve customers in rural areas face similar operational challenges as utilities serving customers in more densely populated areas. However, we do not enjoy the same access to telecommunications infrastructure and much of our service territory is underserved or unserved by common carriers and non-regulated telecommunications companies. For WFEC to achieve a broadband network to all required resources within our service territory we would have to privately build a telecommunications infrastructure comprised of licensed fixed microwave and fiber optics. Today, WFEC operates a fixed microwave transport network that includes 100 sites in our service territory. If WFEC installed a pervasive broadband network based on fixed microwave that site count would approach 500 sites. The economic and environmental impact of such an infrastructure build would be dramatic. Fiber optic installation for a broadband network to service WFEC's operational needs in our service territory would surpass 150 million dollars. Point-to-multipoint radio access networks are the only affordable option to address the coverage and capacity requirements in our vast service territory.

A broadband radio frequency network with favorable propagation characteristics such that the 900Mhz spectrum has, is a highly desirable option for utilities.

NOI Questions

The NOI requests responses to specific questions in part III of the document. WFEC will comment on a specific subset of the standing request which includes:

Part B. Section 26

Part B. Section 28

Part B. Reconfiguring the Band to Create a Broadband Service

Section 26. *"We inquire generally as to whether or not the Commission should designate some portion of the 900 MHz band for broadband operations."*

WFEC Response

WFEC believes the Commission should designate some portion of the 900 MHz band for broadband operations. The band was configured in 1986 and has been unchanged for the last 30 years, While the need for telecommunications capabilities as well as the technology that facilitates telecommunications has evolved immensely in the same period. WFEC believes that broadband networks which can service requirements that were previously serviced by narrowband channels, will better support existing and future requirements. An approach to broadband communications that will allow for narrowband requirements to be serviced by broadband networks will also alleviate the pressure on the narrowband segment of redefined band configuration.

Part B. Reconfiguring the Band to Create a Broadband Service

Section 26. *"…Would a broadband service in this band better serve the B/ILT users' needs than the current configuration?"*

WFEC Response

WFEC believes a broadband service in this band would better serve the B/ILT users' needs than the current configuration. It could allow for a viable option for utilities to address increasing communications requirements associated with critical infrastructure. We believe in most cases the broadband service can be used to serve both new communications requirements as well as legacy narrowband services.

Part B. **Reconfiguring the Band to Create a Broadband Service**

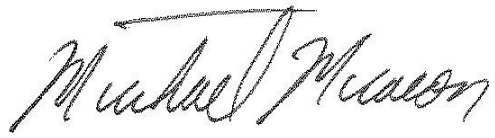
Section 28. *"…We also seek comment on whether or not the band should be fully reconfigured to create a 5/5 megahertz broadband channel."*

WFEC Response

WFEC believes a fully reconfigured band to create a 5/5 MHz broadband channel would be appropriate if it were achieved through a phased transition process over ten years. For instance, if the band were configured to support both broadband and narrowband services, when appropriate attrition targets or timelines are met in the narrowband portion of the band the band could be transitioned to a 5/5 MHz configuration. But WFEC does not believe a complete reconfiguration of the band to a 5/5 MHz configuration is appropriate without a phased transition approach.

WFEC concludes that utilities need access to private or commercial broadband RF networks with favorable propagation characteristics. WFEC feels that the 900 MHz band would be a great opportunity for utilities to sustain their evolving telecommunications requirements. We urge the commission to consider reconfiguring the 900 MHz band and takes steps to enable broadband operations in the 900 MHz band.

Michael Meason



Manager of Technical Services

Western Farmers Electric Cooperative